## Screening Policies for Health Impact Assessment: cluster analysis for easier decision making

**Leonor Bacelar-Nicolau**

*L Bacelar-Nicolau[1,2], J Pereira Miguel[1,2], G Saporta[3]*
[1]Institute of Preventive Medicine&Public Health, Faculty of Medicine, Universidade de Lisboa, Lisboa, Portugal
[2]ISAMB-Institute of Environmental Health, Faculty of Medicine, Universidade de Lisboa, Lisboa, Portugal
[3]Laboratoire CEDRIC, Conservatoire National des Arts et Métiers, Paris, France
Contact: lnicolau@medicina.ulisboa.pt

**Background**
Health Impact Assessment (HIA) is a combination of procedures, methods and tools by which a policy may be judged as to its potential effects and its distribution on a population's health. Screening policies to identify candidates for applying HIA is an essential first step, generally qualitative. Our aim is to show how to use exploratory multivariate statistical methods such as cluster analysis to screen through policies and pinpoint priorities for HIA quickly and reliably.
**Methods**
A panel of 7 public health experts from Nova University in 2011 rated 76 policies proposed by a Technical Group planning the Portuguese hospital reform on a 10-point scale (1-Very low to 10-Very high) regarding Potential Impact, Ease of implementation and Implementation costs. Hierarchical cluster analysis is used to identify groups of similar policies and prioritize those more pertinent of being considered for HIA.
**Results**
We identify 7 groups of policies and find that Ease of implementation is not as relevant to differentiate groups as Potential impact and Implementation costs: 3 groups present higher mean levels of potential impact (with respectively higher, intermediate and lower mean levels of implementation

costs); 2 groups present intermediate mean levels of potential impact (with higher and lower mean costs respectively); 2 groups present lower mean levels of potential impact (with higher and lower mean costs respectively).
Groups of policies are then re-ranked through different priority criteria, but Group 1 leads all possible scenarios pinpointing the most obvious candidates for HIA.

**Conclusions**

Applying methods such as hierarchical cluster analysis as early as the screening step of HIA may be very helpful towards obtaining evidence based, reliable, participatory, flexible and more efficient ways of selecting policies for HIA.

Partially funded by FCT, QREN, COMPETE (HMSP-ICT/0013/2011)

**Key messages**

- Although multivariate statistical methodologies may seem complex, decision-makers obtain more evidence-based knowledge and in an easy way to grasp
- This methodology may be used in other forms of assessments and in different countries